

— Decarbonization Leading Area in Japan —  
Regional Microgrid Created by Utilizing Sewerage  
Resources and Assets

Akita Prefecture Sewerage Management Promotion Division

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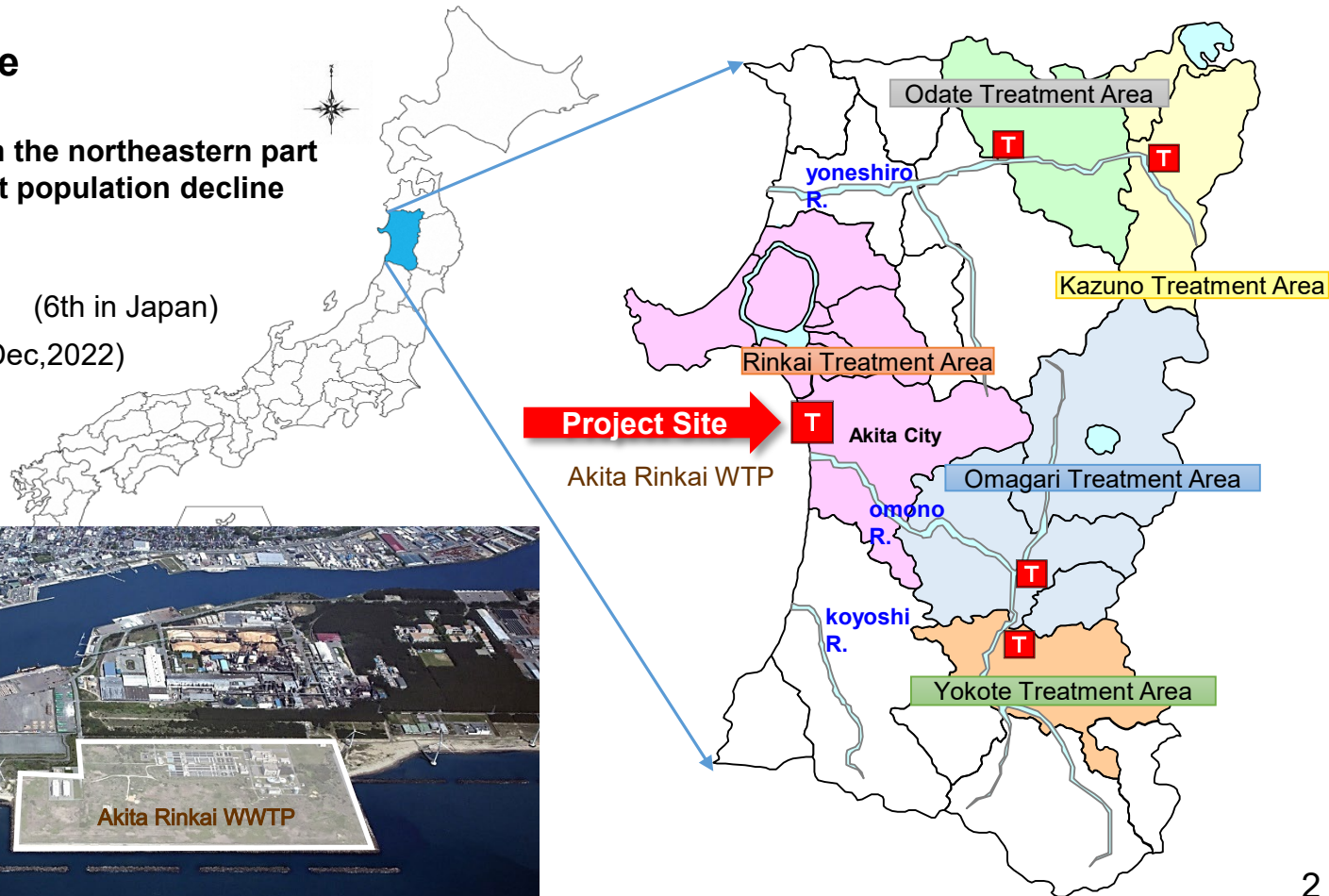
# Sewerage Works of Akita Prefecture

## Akita Prefecture

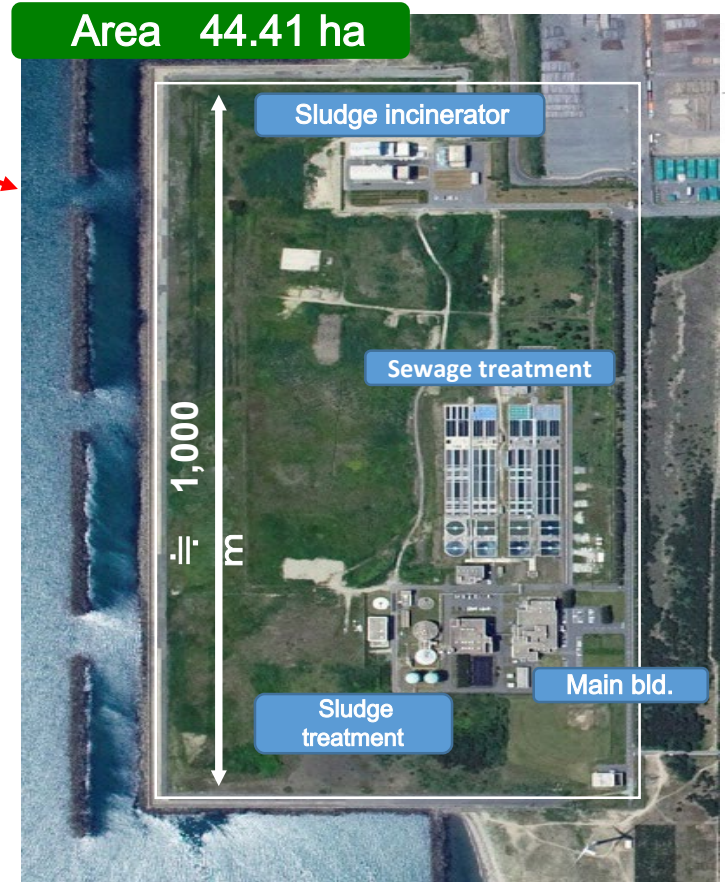
Akita Prefecture is located in the northeastern part of Japan and has the highest population decline rate in Japan.

✓ **Area 11,638 km<sup>2</sup>** (6th in Japan)

✓ **928,000 people** (Dec,2022)



This WWTP, which aims to decarbonize, is the largest WWTP in Akita Prefecture, treating an average of 110,000 m<sup>3</sup>/d.



Name	Akita Rinkai wastewater treatment plant
processing method	Conventional activated sludge process
processing capacity	max. 143,000 m <sup>3</sup> /day
processing start	April, 1982
Associated Municipalities	3 cities, 4 towns, 1 village

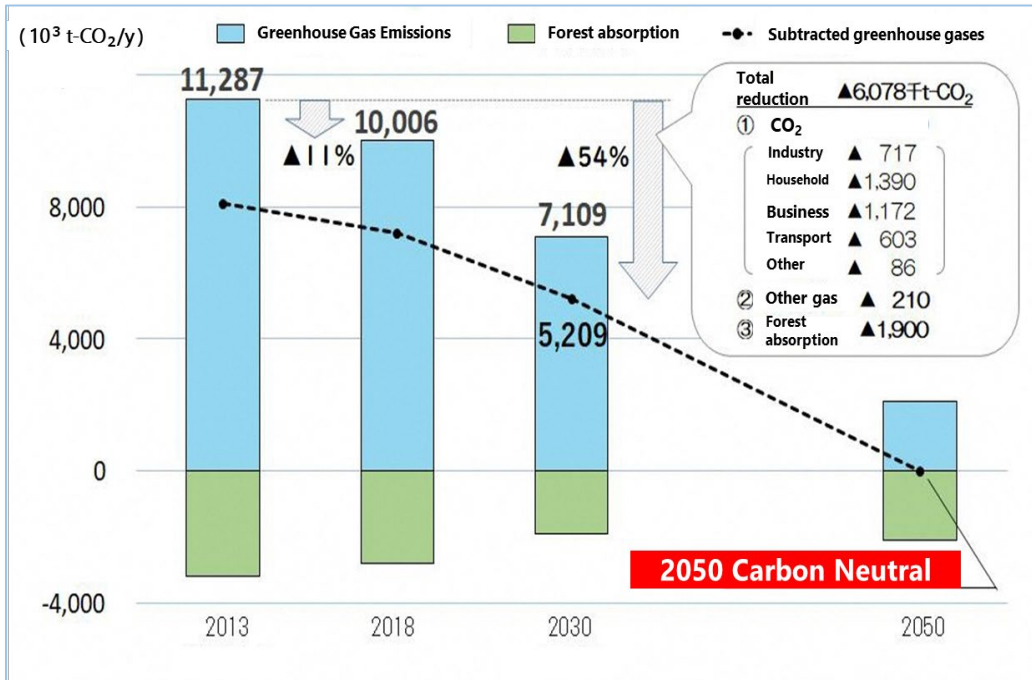


# Akita Prefecture's Global Warming Prevention Goals



## Akita Pref. 's Greenhouse gas emissions in 2030

**5,209,000t-CO<sub>2</sub>** (▲54% compared to 2013)



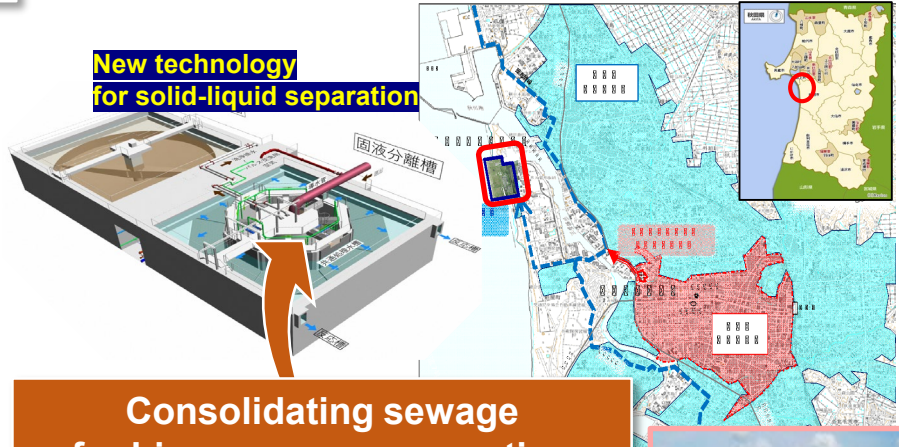
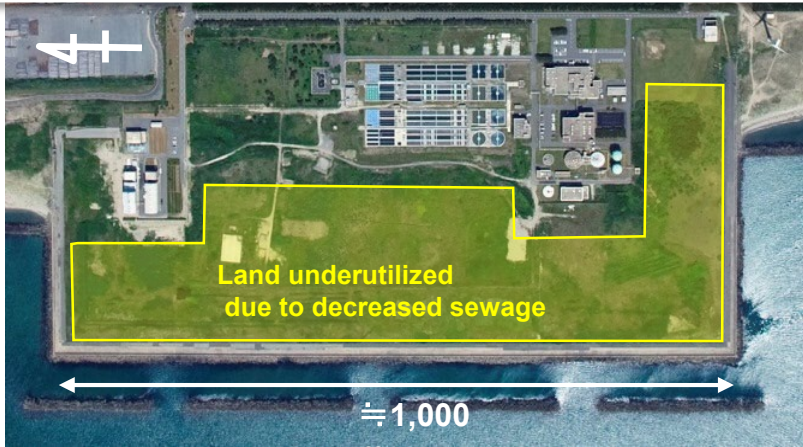
Rank	Facility Name	Energy-related CO <sub>2</sub> emissions (t-CO <sub>2</sub> /y)
1	<b>Akita Rinkai WWTP</b>	<b>8,019</b>
2	Southern Drainage Pump Station	4,084
3	Northern Drainage Pump Station	3,261
4	Facilities for the physically and mentally challenged	3,335
5	<b>Odate WWTP</b>	<b>2,158</b>
6	Oga aquarium	1,944
7	Akita Furusato Village	1,854
8	<b>Omagari WWTP</b>	<b>1,837</b>
9	Prefectural Swimming Pool	1,720
10	Southern Area for the Elderly	1,676

**Akita Rinkai WWTP emits the most CO<sub>2</sub> and the other GHGs(CH<sub>4</sub>& N<sub>2</sub>O)**

**Decarbonize Akita Rinkai WWTP as a top priority**

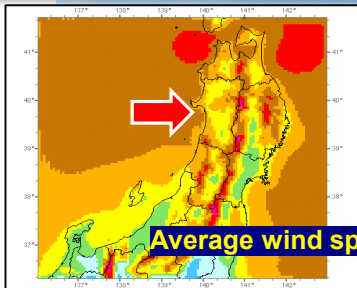
# Akita Rinkai WWTP has abundant renewable energy potential

## Large area for solar power generation



Consolidating sewage for biogas power generation

## Good location for wind power generation



**Akita City WWTP**  
(Only for rainwater treatment from 2020)

# Group of public facilities near Akita Rinkai WWTP

## Supply of decarbonized electricity on own lines



38  
MWh/y



Vocational school

534  
MWh/y



Akita City Urine TP

13,623 MWh/y



Akita Rinkai WWTP

905  
MWh/y



Industrial Technology Center

212 MWh/y



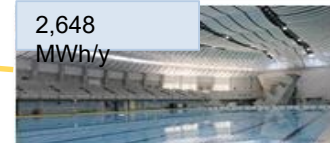
Technical college

216 MWh/y



Baseball stadium

2,648  
MWh/y



Swimming pool

902  
MWh/y



Food Research Center

1,434 MWh/y



AIT Research Institute

画像 ©2021 CNES / Airbus, Digital Earth Technology, Landsat / Copernicus, Maxar Technologies, 地図データ ©2021 500 m

# Regional Microgrid Created from Sewerage

Renovating a wastewater treatment plant into a carbon neutral energy supply center !!



# Effects generated in Decarbonization Leading Area

Generous support for the project from the Japanese government through selection as a Decarbonization Leading Area



This project aims to be realized in the period 2022-2025

## Expected Effects

- Energy independence of WWTP
- Early realization of carbon neutrality
- Regional circulation of energy costs
- Improving disaster resilience
- Creating a lively community etc.



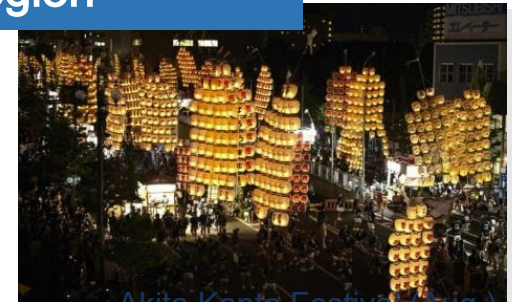
## Decarbonization to revitalize the region



Akita



Kamakura Festival (Feb.)



Akita Kanto Festival (Aug.)